

## **The number of branches on an unrooted tree with N tips**

Try to construct a formula for the number of branches on an unrooted tree with N tips.

Hint #1: Draw trees with  $N=3$ , 4, 5, and 6 tips, count the branches and try to guess the formula

Hint #2: Starting from a tree with, e.g., 4 tips: add a tip, and notice how many additional branches that are created by this.

## **The number of possible unrooted trees with N tips**

Try to construct a formula for the number of possible unrooted trees that have N tips.

Hint #1: Starting with a tree that has, e.g., 4 labeled tips: How can you derive new trees from this starting point?

Hint #2: The formula from the previous page is relevant.